

**STATE:** MONTANA  
**GRANT TITLE:** High Priority Terrestrial Montana Habitats and Wildlife Species  
SWG Conservation Program  
**MT TRACKING #:** T – 37 – HM - 5

**PROJECT 1. Riparian, Grassland, and Sagebrush Habitat Protection and Conservation**

Fish, Wildlife and Parks (FWP) focused conservation work on high priority community types including sagebrush and riparian/wetland. Through the conservation of these communities we aimed to conserve the diversity of species in these habitats. Actions focused on both private and publicly owned lands and partner projects.

Horseshoe Pond: A small water control structure at an important wetland was restored to protect the associated pond and wetlands (Figures 1-2.). These areas are critical year round to waterfowl and a diversity of nongame bird species which also use the area to nest and over winter. Restoration of these wetlands ensures recreationists and bird watchers from the nearby city of Dillon can continue to enjoy the area.

French Gulch: The French Gulch project area is located within the Big Hole watershed of Western Montana (Figures 3-4). The purpose of this project was to restore degraded riparian areas resultant from mining activities and a disconnected flood plain. FWP partnered with the Big Hole Watershed Committee to design work for restoring the impacted reaches of the stream and riparian area.

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Once restored, the habitat in French Gulch would potentially benefit the following species of concern: nongame birds (including but not limited to: great blue heron, alder flycatcher, Pacific wren, and veery); herptiles (including Western toad); mammals (including but not limited to: Western spotted skunk, Northern bog lemming, Townsend's big-eared bat, hoary bat, and fringed myotis); aquatic species (western pearlshell mussels, arctic grayling, and westslope cutthroat trout).

Foys Bend: Efforts to restore a hay-field to an upland riparian forest (Figure 5) in northeast Montana continued again this year with the plantings of 1,500 trees and shrubs. Species composition was selected based on historical aerial photographs and remnant plant communities adjacent to the wetland. Species include: chokecherry, Douglas' hawthorn, western snowberry, red-osier dogwood, quaking aspen, black cottonwood, Douglas' fir, Engelmann's spruce, silverberry, wood's rose and ponderosa pine. Spatial arrangement of plantings was based on species' life history characteristics and local topography. Deer fencing was installed around the new plantings and weed control was implemented. Exclosures were erected to promote current aspen and cottonwood regeneration. The estimated total area of restoration for FY 2014 was approximately 11 acres.

## **PROJECT 2. Species-Based Conservation**

Conservation efforts at the landscape and community level offer some of the greatest potential to leverage resources in order to provide benefit to multiple species. However, certain species are much more specialized or are tied to specific habitat types. In other cases, populations have declined to the point where they require individual management and research efforts. Species-specific enhancement efforts focused on developing suitable and effective assessment protocols, conducting assessments to ascertain current status, distribution and demographic attributes, and working with partners to implement specific protocols across private and public lands so as to further identify key conservation needs and implement effective conservation strategies.

General Conservation: State Wildlife Grant dollars were used to fund wildlife biologists in FWP Regions 1, 4 and 7 (Figure 6) to address high priority species conservation issues within these areas. SWG funding was also used to support a statewide avian conservation biologist to organize and implement conservation efforts such as the Montana Curlew Habitat Initiative. These biologists work cooperatively with conservation partners, universities, federal and state partners when and where appropriate, and using the most current scientific information to develop and implement conservation programs for high priority terrestrial species. Staff conduct more intensive species-specific monitoring to ascertain important demographic vital rates and how those vital rates are affected by existing land use practices or may be modified by changing land use practices, as well as how the species have responded to specific conservation actions.

Long-billed curlew conservation: FWP worked with Montana Audubon and other partners within the Montana Bird Conservation Partnership to launch the Long-Billed Curlew Habitat Initiative in 2013. Work continued in 2014 to survey curlews in western Montana and to begin implementation of habitat conservation work. FWP worked with Montana Audubon staff to conduct curlew surveys in the Upper Missouri Valley (22 observers, 274 stops, 49 curlews, 17 incidental curlew sightings) and in the Mission Valley (20 observers, 276 stops, 82 curlews). These data will be given to the Montana Natural Heritage Program in order to update habitat suitability maps. A spring partners meeting was held and included some new and key players to habitat conservation discussions, i.e. Natural Resources Conservation Service (NRCS). A second focus area, the Upper Missouri Valley (Figure 7), was proposed to be added to the initial focus area of the Mission Valley (Figure 7). Efforts to complete a planning and action summary for the Mission Valley focal area to include highest priority conservation actions, potential partners and potential funding sources is underway. One landowner agreement with NRCS was finalized to implement a grazing system that will benefit the curlew. The success of this agreement is sparking interest by surrounding landowners. The partnership is compiling potential strategies for the Upper Missouri Valley area with hopes to begin habitat conservation implementation for curlews there in 2015.

Sage-grouse Managed Grazing Assessment: Sage-grouse hens were monitored on ‘Sage-Grouse Initiative’ contracted lands (hereafter SGI area) and compared with data on sage-grouse hens monitored in areas where there were no SGI grazing systems in place (hereafter non-SGI areas) (Figure 8). Work completed included capturing and radio-marking hens, finding and monitoring nests, capturing and radio-marking chicks, and measuring key vegetation characteristics in sage-grouse habitat and in areas with varying grazing treatments. Radio telemetry was used to collect data on hen survival, nest success, and chick survival. Vegetation data at nests and at unused

sites in potential sage-grouse nesting habitat was used to measure the influence of vegetation and grazing treatments on sage-grouse vital rates and habitat use. Data was also collected at rested and un-rested pastures on ranches included in SGI as well as non-SGI ranches to get a separate measure regarding how vegetation responds, in general, to SGI grazing systems. In addition to the SGI /non-SGI comparison, each pasture that sage-grouse used was placed into one of four grazing treatments. These treatments were defined with respect to sage-grouse ecology rather than SGI grazing systems enabling us to extrapolate the results to other grazing systems. The treatments will also provide additional insights into SGI grazing systems and if/how the systems can be improved:

1. Grazed during the nesting season (April 1<sup>st</sup> – July 20<sup>th</sup>),
2. Grazed during brood-rearing (July 21<sup>st</sup> – September 15<sup>th</sup>),
3. Grazed during fall/winter after broods break-up until the start of the next breeding/nesting season (September 15<sup>th</sup> – Apr 1<sup>st</sup>), or
4. Rested the entire year (Apr 1<sup>st</sup> – Apr 1<sup>st</sup> the following year).

The preliminary results from the first 3.5 years of this study indicate that SGI systems are having a positive impact. However, annual weather fluctuations and lag responses in habitat and sage-grouse population vital rates to habitat management preclude strong inferences from these first years. This project will be continued over the long-term to be able to more rigorously examine our preliminary results.

Fence Markers for Sage-grouse: A multi-partner group including FWP collaborated on an effort to reduce fence collisions by sage-grouse in 2014. Fence marking has been found to reduce collision rates up to 85%. Markers were purchased in bulk and deployed on the 200 acre property of a willing landowner located in a sage-grouse core area (Figure 9). The distribution and application of fence markers was tracked and provided to the USFWS to demonstrate conservation action for consideration in the final listing decision in 2015.

Prairie Dog and Black-Footed Ferret Conservation: FWP continued efforts to identify the highest priority prairie dog complexes in southcentral Montana and explore opportunities for landowner incentive or stewardship programs to keep prairie dogs on these complexes. FWP contributed logistic support to the field trials meant to assess Sylvatic Plague vaccine efficacy in Northeast Montana. Specific efforts are ongoing to 1) measure vaccine/bait uptake in prairie dogs under field conditions, 2) assess and compare prairie dog (and possibly ferret) survival rates in sites with and without vaccine/bait application, and 3) to monitor the occurrence of plague in sites with and without vaccine application. Field work began in May, 2013 with US Fish and Wildlife Service staff setting up field sites, distributing baits and collecting data on prairie dog presence. Data collection continued in 2014.

FWP also partnered with APHIS Wildlife Services staff and the World Wildlife Fund to complete six weeks of insecticide dust application to an occupied black-tailed prairie dog complex in Blaine county (Figure 10). Approximately 1,500 acres of habitat were dusted making this complex more suitable for consideration of a ferret introduction.

### **PROJECT 3. Species Survey and Inventory**

During development of the Montana State Wildlife Action Plan, it was recognized that sufficient information was lacking to determine the status of many species or groups of species. Data collected on the distribution, life history, habitat requirements, and general ecology of species and groups of species will aid in identifying species in need of conservation, help to understand factors affecting declining species, and help to understand habitat requirements and species life histories.

General survey and inventory: FWP and cooperators regularly identify information gaps for species or groups of species and focus monitoring efforts in isolated regions or habitats of Montana in order to collect information that may lead to removal of these species from the 'inventory needed' list or to raise conservation concern where necessary. Specifically, SWG dollars were used to fund wildlife biologists in FWP Regions 1, 4 and 7 (Figure 6) address high priority species inventory needs within these areas. An Avian Conservation Biologist was hired to help with these efforts statewide. MFWP staff continued to look for black swifts, northern bog lemmings, Coeur d'Alene salamanders, smooth greensnakes, and other rare species across the state to add to the very limited current information. New observations were added to databases throughout 2014. Biologists worked with Montana Audubon in particular to organize citizen scientists to survey for black swifts, harlequin ducks, golden eagles and white-tailed ptarmigan.

Data Management: Over 17,000 pending records for over 140 Species of Concern or Potential Species of Concern were reviewed and added to the point observation database. This information was used to update Species Occurrence records that are used for environmental reviews critical to appropriate planning and development. Over 80,000 pending records for non Species of Concern were reviewed and added to the point observation database to ensure information on common species is up to date and available. The Species of Highest Inventory Need list and web pages were updated for many non Species of Concern and Conservation Status Accounts were updated in the Montana Field Guide for many species.

All Bird Monitoring: FWP, in conjunction with the Rocky Mountain Bird Observatory, USDA Forest Service, USDI Bureau of Land Management, Northern Great Plains Joint Venture, Avian Science Center, and other partners continued landbird monitoring throughout all of the Badlands and Prairies, Prairie Potholes, and Northern Rockies bird conservation regions of Montana (Figure 11). This Integrated Bird Monitoring by Bird Conservation Region program known as the IMBCR uses a spatially-balanced sampling design with the Bird Conservation Region as the sampling frame and stratification by land management boundaries and ecoregional attributes. This monitoring design allows inferences about avian species distributions and population sizes from small scales to entire Bird Conservation Regions, facilitating conservation from fine scales to national and international levels. It also provides the baseline data necessary to prioritize habitats for conservation, restoration, and management. This type of monitoring was conducted again in 2014 throughout Montana for the fifth year. A complete assessment of the data and utility of this work is underway and will be used for consideration of any additional funding from Montana.

Other landbird monitoring efforts were coordinated with Montana Audubon through its citizen science program. Efforts were targeted to complete recently abandoned breeding bird survey routes or at Important Bird Areas where baseline data was lacking.

Species Group Monitoring: Owl surveys with a focus on screech-owls were conducted in the late winter and early spring of 2014. Over 55 nights of call playback surveys for a total of 183 independent surveys were conducted March through May on 10-stop road-based survey routes with stops spaced 1 mile apart. Surveys were conducted statewide and based off of a random selection of road routes within bird latilong or quarter latilong blocks. Surveys started 30 minutes past sunset and each stop lasted 10-12 minutes so that 2-3 routes per night could be done in 6 hours. In addition to detecting 11 species of owls, field crews recorded Eastern fox squirrels and Eastern gray squirrels statewide as they passed through towns during the day and black-tailed jack rabbits were recorded in the evenings in southwest Montana.

Overall, there were 509 owl detections and 506 incidental species detections at the 1829 call stations that were surveyed. Survey highlights:

Eastern Screech-Owl

- Large numbers of first time records for survey units, i.e., quarter latilong blocks
- 27 new indirect evidence of breeding records whereas there had only been 18 gathered across all time previously

Long-eared Owl

- Numerous first time records for survey units
- 53 new indirect evidence of breeding records whereas there had only been 30 gathered across all time previously

Short-eared Owl

- 123 new indirect evidence of breeding records whereas there had only been 100 gathered across all time previously

Northern Saw-whet Owl

- Numerous gaps in range filled in
- 66 new indirect evidence of breeding records whereas there had been 137 gathered across all time previously

Western Screech-Owl

- 1 first time record for a survey unit

Great Horned Owl

- Nearly doubled the number of indirect evidence of breeding records on file

Eastern Fox Squirrel

- Extended known range to Plentywood, in northeast Montana

Colonial waterbirds were surveyed again in 2014 for the sixth consecutive season. During May and June, 14 sites were surveyed and data were collected on all of the 18 waterbird species known to nest in Montana (including one seldom seen species recorded in 2014). Target species include Clark's grebe, American white pelican, double-crested cormorant, great blue heron, black-crowned night heron, white-faced ibis, Franklin's gull, caspian tern, Forester's tern, common tern and black tern.

Hoary Marmot Monitoring: The hoary marmot is a species of greatest conservation need in Montana due to a lack of observation data, dependency on critical habitats and a need for specific monitoring efforts. Specific conservation concerns for Montana hoary marmots include a lack of data on status and size of population, concerns over connectivity between populations in distinct mountain ranges, and change in climate. Rigorous monitoring of hoary marmots in Montana began in 2014 with field visits to 8 study sites (Figure 12) where animal observations and habitat conditions were recorded. The hope of this work is to increase data on marmot distribution and habitat characteristics, and establish a long-term monitoring protocol.

Golden Eagle Monitoring: An aerial survey to locate golden eagle nests was conducted in three areas of Montana during May and early June 2014. The three survey areas (Figure 13) were located in: 1) eastern Montana from Miles City to Sidney west of the Yellowstone River, 2) north-central Montana from Great Falls to the Lewistown area north to Highway 2, and 3) south-central Montana from McLeod to the Bridger area up to the base of the Absaroka, Beartooth, and Pryor mountain ranges. All observations of golden and bald eagles and their nests were recorded during the survey. Nests were classified as active, occupied, or inactive. During the survey, 164 golden eagle nests were found with 47 of these being classified as active, 25 as occupied, and 94 as inactive. A total of 166 adult golden eagles were observed and 63 chicks were observed at nests. Most golden eagle nests were associated with cliffs, but some nests were located in plains cottonwood trees. Most cliff nests were associated with igneous and sandstone rock, with few nests found on limestone cliffs. The highest golden eagle nesting density was found around the Bears Paw Mountains.

Observations of bald eagles and bald eagle nests were also recorded during the survey. Twenty-two active bald eagle nests were found and an additional six nests were classified as inactive. All bald eagle nests were located in cottonwood trees adjacent to water bodies. Sixty-eight adult bald eagles and 41 bald eagle chicks were observed. Most of the bald eagle observations were along the Missouri and Marias Rivers while none were observed along a 15 mile stretch of the Milk River.

Bat Monitoring: Acoustic data from bat detectors set across the state (Figure 14) continues to be gathered, analyzed and summarized by the Montana Natural Heritage Program. Reanalysis of all detector data for spotted bat and reanalysis of a small amount of data from selected southeast Montana detectors for Northern myotis was conducted. Results are pending final review. Project highlights:

- Prepared summaries of year-round nightly bat activity levels as measured by the number of bat passes detected, regardless of species,
- Prepared summaries of year-round nightly activity levels of individual bat species based on automated Sonobat 3.0 call id analyses in order to identify annual timing of emergence to and emergence from hibernacula by resident bat species and timing of spring and fall migrations by migratory species,
- Prepared summaries of timing of nightly activity patterns of individual bat species based on automated Sonobat 3.0 call id analyses,
- Developed correlations of overall bat activity and activity of individual species with temperature,

- Verified Sonobat 3.0 automated call identification analyses of monthly species presence and minimum temperatures of activity by field-truthing,
- Summarized all information gathered on individual ultrasonic acoustic monitoring devices in site specific PowerPoint presentations that can be readily shared.